

REMARKS

This is a full and timely response to the outstanding non-final Office action electronically delivered on April 26, 2011. Reconsideration and allowance of the application and presently pending claims 1-4, 13 and 15 are respectfully requested.

Present Status of the Application

Applicants thank the Examiner for the thorough examination of this application.

In the instant Office action, claims 1-4, 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woods (U.S. Pat. No. 3,594,584; hereinafter “Woods”) or Switsen (U.S. Pat. No. 3,771,017; hereinafter “Switsen”) or White (U.S. Pat. No. 4,007,399; hereinafter “White”), all in view of Lin (U.S. Pat. No. 5,982,601; hereinafter “Lin”).

After carefully considering the Office Action and the cited references, Applicants have amended claim 1 to respectfully traverse all the rejections on the grounds set forth in detail below. No new matter has been entered since the amendment is fully supported by FIGs. 4, 5A, 5B and the related description thereof as originally filed. Applicants thereby respectfully assert that all the pending claims 1-4, 13 and 15 are placed in proper condition for allowance. Reconsideration of all the pending claims is respectfully requested.

Interview Summary

Applicants respectively recall during the telephone interview conducted between our representative Mr. Michael Su and the Examiner NADAV, ORI. Examiner NADAV, ORI explained how Woods teach the claimed invention. Applicants’ proposed amendment was also discussed.

Discussion of the claim rejections under 35 U.S.C. 103

Claims 1-4, 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woods or Switsen or White, all in view of Lin.

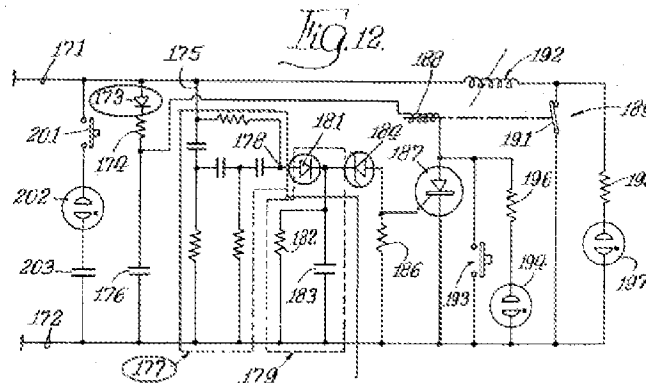
In response thereto, Applicants have amended claim 1 to patently define the present application over the cited references. Applicants hereby traverse these rejections on the grounds set forth in detail below.

Pertaining to claim 1 of the present invention, as currently amended, it recites in part as below:

“An electrostatic discharge (ESD) protection circuit, comprising:

...

a first diode, having an anode directly connected to the I/O pad and a cathode directly connected to the fourth connection terminal, wherein when an over positive voltage does not occur on the I/O pad, the first diode is not conducted, and the anti-latch-up circuit substantially generates an anti-latch-up signal to the third connection terminal of the SCR circuit according to the voltage source so as to prevent latching up of the SCR circuit during normal operation, and **when the over positive voltage occurs on the I/O pad**, the first diode is conducted, and **the anti-latch-up circuit does not substantially generate the anti-latch-up signal in response to the conduction of the first diode.**”
(Emphasis added)



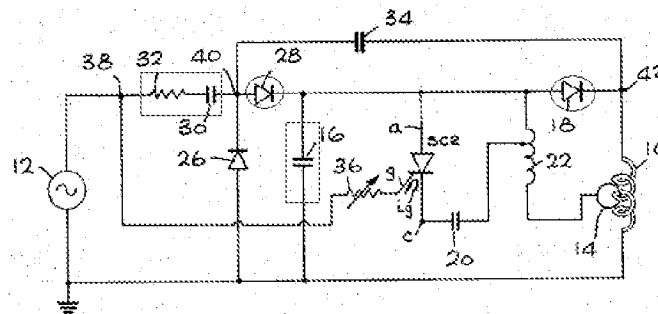
As shown in Fig. 12 of Woods, the diode 181 and the diode 183 are not individually equivalent to the first diode as set forth in claim 1 of the present application because the diode 181 and the diode 183 are regarded as the extension of the elements 177, 182 and 183 or the extension

of the element 187. Furthermore, the anode and the cathode of the diode 173 are respectively coupled to the conductors 171 and SCR 187. By contrast, as shown in Fig. 4 of the present application, the anode and the cathode of the diode 108 are respectively coupled to the I/O pad and the anti-latch-up circuit 110. In other words, Woods fails to disclose technical feature reciting “a first diode, having an anode directly connected to the I/O pad and a cathode directly connected to the fourth connection terminal” as set forth in amended claim 1.

Besides, in column 9 of Woods, it recites in part as below:

「 Connected across the two conductors 171 and 172 are a rectifier 173, a resistor 174, and a capacitor 176, these three components providing half wave rectification of the power line voltage. Pulses generated by a transmitter appear on the two power lines and on the conductors 171 and 172, and these signals pass through a conductor 175 and a conventional notch filter 177 which is tuned to 60 c.p.s. 」

It can be deduced that, the rectifier 173 is a part of half wave rectifier and the notch filter 177 is a filter. Besides, Woods fails to disclose “how the notch filter 177 stops generating a signal in response to the conduction of the rectifier 173”. Accordingly, Woods fails to disclose technical feature reciting “the anti-latch-up circuit does not substantially generate the anti-latch-up signal in response to the conduction of the first diode” as set forth in amended claim 1.



Similarly, as shown in Fig. 1 of Switsen, the connections of the diode 18 and the diode 28 are individually different from the connections of the diode 108 of the present application. In other words, Switsen fails to disclose technical feature reciting “a first diode, having an anode

directly connected to the I/O pad and a cathode directly connected to the fourth connection terminal” as set forth in amended claim 1.

Besides, in column 3 of Switsen, it recites in part as below:

「The resistance of the lamp then drops from a very high level to a very low level so that a large current can flow from a power capacitor 16 through a diode 18 and through the lamp to create a brief high intensity flash of light. 」

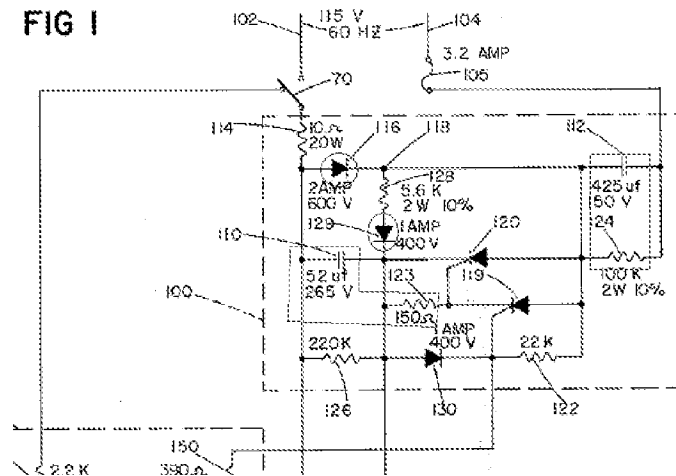
It can be deduced that, the diode 18 is used for providing the discharging path of the power capacitor 16. By contrast, as shown in Fig. 4 of the present application, **the anti-latch-up circuit 110** does not substantially generate the anti-latch-up signal **in response to the conduction of the diode 108**. Accordingly, the power capacitor 16 of Switsen is not equivalent to the claimed anti-latch-up circuit 110 of the present application, and the diode 18 of Switsen is not equivalent to the claimed diode 108 of the present application.

Furthermore, in column 4 of Switsen, it recites in part as below:

「The power capacitor 16 is charged by a voltage doubling circuit which includes two diodes 26, 28, a capacitor 30 and a current-limiting resistor 32. 」

It can be deduced that, the capacitor 30 and the diode 28 are a part of the voltage doubling circuit, and the diode 28 is used for controlling the charging path of the power capacitor 16. Accordingly, the resistor 32 and the diode 28 of Switsen are not equivalent to the claimed anti-latch-up circuit 110 of the present application, and the diode 28 of Switsen is not equivalent to the claimed diode 108 of the present application.

FIG 1



As shown in Fig. 1 of White, the connections of the diode 116 and the diode 129 are individually different from the connections of the diode 108 of the present application. In other words, White fails to disclose technical feature reciting “a first diode, having an anode directly connected to the I/O pad and a cathode directly connected to the fourth connection terminal” as set forth in amended claim 1.

Besides, in columns 2-3 of White, it recites in part as below:

「 When rising voltage on capacitor 110 is sufficiently higher than that at junction 118, the latter dropping with the AC cycle, SCRs 119 and 120 turn off. They are kept off by the negative voltage maintained at the gate of SCR 119 by diode 130, a result of current flowing from capacitor 112 through resistor 128, diode 129, and diode 130 into circuit 108, as more fully described below. 」

It can be deduced that, the conduction of the diodes 116 and 129 is determined by the cross voltages of the capacitors 110 and 112. In other words, White fails to disclose technical feature reciting “**the anti-latch-up circuit** does not substantially generate the anti-latch-up signal **in response to the conduction of the first diode**” as set forth in amended claim 1.

As shown in Figs. 6A, 6B and 6C of Lin, the ESD protection circuit does not disclose any

diode. In other words, Lin fails to disclose technical feature reciting “a first diode, having an anode directly connected to the I/O pad and a cathode directly connected to the fourth connection terminal” as set forth in amended claim 1. Besides, because the ESD protection circuit does not disclose any diode, the operation of the transient oscillator circuit 61 has no relationship with the diode. Accordingly, Lin fails to disclose technical feature reciting “**the anti-latch-up circuit** does not substantially generate the anti-latch-up signal **in response to the conduction of the first diode**” as set forth in amended claim 1.

"[O]bviousness requires a suggestion of all limitations in a claim." *CFMT, Inc. v. Yieldup Int'l. Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003) (citing *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)).

From the above, Woods, Switsen, White and Lin are deficient in teaching or suggesting at least the technical feature of “a first diode, having an anode directly connected to the I/O pad and a cathode directly connected to the fourth connection terminal” and technical feature of “**the anti-latch-up circuit** does not substantially generate the anti-latch-up signal **in response to the conduction of the first diode**” (emphasis added) as set forth in the currently amended claim 1. Therefore, the teachings of Woods, Switsen, White and Lin, in any combination, fail to render the invention set forth in claim 1 obvious. Applicants respectfully submit that claim 1 is patentable and allowable over the cited references.

If an independent claim is non-obvious under 35 U.S.C. Section 103, then any claim depending therefrom is non-obvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). As such, claims 2-4, 13 and 15 directly or indirectly depending upon the allowable claim 1 should be allowed as a matter of law.

Withdrawal of the 103 rejections is accordingly requested.

CONCLUSION

For at least the foregoing reasons, it is believed that all the pending claims 1-4, 13 and 15 of the present application patently define over the prior art and are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

Respectfully submitted,
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